UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,525	02/04/2005	Koji Maegawa	P26638	1307

7055 7590 02/26/2008

GREENBLUM & BERNSTEIN, P.L.C.
1950 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER	
KHAN, ASIF H	

ART UNIT	PAPER NUMBER
4183	

NOTIFICATION DATE	DELIVERY MODE
02/26/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
pto@gbpatent.com

Office Action Summary	Application No.	Applicant(s)	
	10/523,525	MAEGAWA ET AL.	
	Examiner	Art Unit	
	ASIF H. KHAN	4183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *February 04, 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *Feb. 04, 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/05/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of a certified copy of the foreign priority under 35 U.S.C. 119 and 365 from the International Bureau, based upon Japanese Application No. 2003-338696, filed 29 September 2003

Drawings

2. The drawings are objected to because of the following:

   a. In FIG. 3, 5, 6, 9, 14B, and 15, text reading “FORMAL-PATH" should be changed to “FIXED-PATH” in the relevant locations to be consistent with the terminology used in the disclosure.

   b. In FIG. 7, 8, 15, and 16, “IDS” in the relevant blocks should be changed to “IDs) to correctly represent the plural form of the acronym ID.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the

remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Disclosure Objections

Title

3. The title of the invention is repetitive and does not precisely reflect the invention as claimed, since the path setting method also relates to a child station. A new title is required that is precise and clearly indicative of the invention to which the claims are directed. The following title is suggested: “PATH SETTING METHOD FOR NETWORK STATIONS”.

Specification

4. The disclosure is objected to because of the following informalities:

Page 1, line 15, “and other factor” should be “and other factors”.

Page 2, lines 6-8, “means for … VLAN information”, is improperly structured and ambiguous. Therefore it needs to be rephrased.

Page 9, line 9, “cased” should be “case”.

Page 12, line 6, “it means that” is unnecessary and should be deleted.

Page 12, line 14, “configuration a parent station” should be “configuration of a parent station”.

Page 12, line 15, “configuration a child station” should be “configuration of a child station”.

Page 12, line 28, “parent station11” should be “parent station 11”.

Page 12, line 29, and page 13, line 1, “patent station” should be “parent station”.

Page 15, line 8, the comma at the beginning of the line should be deleted.

Page 16, line 25, “an downlink” should be “a downlink”.

Page 16, line 29, “a embedded” should be “an embedded”.

Page 20, lines 7 and 12, “basis-information” should be “basic-information”.

Page 35, the sentence “While a fixed-path ….. (distribution line) 14", is too long, and ambiguous. Therefore it needs to be rephrased

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. **Claims 1-7** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the limitation recited about a “temporary path” on page 12, lines 6, 7, 10, 15, 23, and page 13, line 1, is ambiguous and indefinite since it is not evident what is different between the “path" and a "temporary path" as recited in the

claim. The examiner for the purpose of examining the case will interpret "temporary path" simply as an updatable path.

Regarding claim 4, it is not evident what is implied by the limitation "allowing the parent station to present the comparison", on page 16, last line. The examiner for the purpose of examination of this case, will interpret it as the parent station implementing the result of the comparison.

Regarding claim 6, the acronym "PLR" has not been clearly defined in the disclosure. The examiner for the purpose of examination of this case, will interpret it as "Packet Loss Rate".

Regarding claim 7, it is ambiguous and indefinite what the recited limitation on page 20, lines 4-7, "to set a temporary path to the relay station which has transmitted the receiving-environment-table communication signal, and return a temporary-path notification communication signal containing the temporary path to the relay station" means. The examiner for the purpose of examination of this case, will interpret it as updating of the path information from one station to another.

Any claim not specifically addressed above, is being rejected as incorporating the deficiencies of a claim upon which it depends.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. **Claims 1-5** and **7-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura et al. (U.S. Patent #6,396,814), hereinafter referred to as Iwamura.

Regarding claim 1, Iwamura discloses a network (see e.g., col. 1, lines 7-9, showing a communications network), including a plurality of relay stations and a parent station which are connected with each other through a transmission line (see e.g., col.13, lines 50-58, showing a number of communication devices connected to each other thru transmission links; and col. 14, lines 41-50 for a representative device ("parent station") transmitting information about itself to other devices), a path setting method for generating paths from the parent station to respective ones of the relay stations (see e.g., col. 6, lines 30-33, for the selection of communication paths from a communications device to other devices ("relay stations")), the path setting method comprising the steps of:

allowing each of the parent station and the plurality of relay stations to transmit a basic-information notification signal to the network at a first time interval by means of a repetitive broadcast, the basic-information notification signal containing basic

information which includes an identifier identifying its own station and the status of the path setting to its own station (see e.g., col. 13, lines 63-65, col. 6, lines 17-18, and 33-34, for a device broadcasting a message ("basic-information notification signal") to other devices containing identification information about itself, as well as the communication path selected by the device);

allowing, in response to receiving the basic-information notification signal, each of the parent station and the plurality of relay stations to detect a receiving state (see e.g., FIG. 10, element A1 ("Receive Packet") for receiving state (interpreted as a state of the device in which a message/signal/packet may be received) and calculate a transmission quality on a transmission line interconnecting with the station which has transmitted the basic-information notification signal, in accordance with the receiving state (see e.g., col. 6, lines 35-36, for information (interpreted as "transmission quality") about the communication channel interconnecting the devices);

allowing each of the parent station and the plurality of relay stations to create or update a receiving-environment table correlating the basic information contained in the basic-information notification signal to the transmission quality on the transmission line interconnecting with the station which has transmitted the basic-information notification signal, and store the created or updated receiving-environment table therein (see e.g., col. 6, lines 22-25, and col. 24, lines 25-26, for correlation of information received, and updating and storing of communication environment information);

allowing each of the plurality of relay stations to repeatedly refer to the path-setting status in the receiving-environment table at a second time interval greater than

the first time interval, and, when the reference result shows that the path setup information representing the completion of setting a path exists in the path-setting status, transmit a receiving-environment-table communication signal containing the receiving-environment table of its own station through the transmission line used for transmitting the basic-information notification signal containing the path setup information (see e.g., col. 18, lines 44-53, for a timer sending a signal for repeatedly referring to the environment information acquisition section ("receiving-environment table"), and transmitting the acquired information to the other stations);

allowing, in response to receiving the receiving-environment-table communication signal, each of the plurality of relay stations to forward the received receiving-environment-table communication signal to the parent station through the use of the path (see e.g., col. 7, lines 39-41);

allowing, in response to receiving the receiving-environment-table communication signal, the parent station to create or update a transmission-quality table correlating the inter-station transmission line to the transmission quality thereof, in accordance with the identifier and the transmission quality contained in the receiving-environment-table communication signal, and store the created or updated transmission-quality table therein (see e.g., col. 24, lines 3-6, and 20-30, for updating and storing of the communication environment information, in response to receiving the information packet);

allowing, in response to receiving the receiving-environment-table communication signal, the parent station to set a path to the relay station which has

transmitted the receiving-environment-table communication signal, and return a path setup information containing the path to the relay station (see e.g., col. 6, lines 33-36).

allowing, in response to a lapse of a third time period greater than the second time interval, the parent station to set the paths to respective ones of the plurality of relay stations, in accordance with the transmission qualities in the transmission-quality table, and transmit the set paths to respective ones of the plurality of relay stations (see e.g., FIG. 16).

Iwamura does not explicitly disclose setting of a temporary path. However, as noted above, Iwamura does disclose upon notification of a new update in the communication environment information storage section or updating from the communication environment processing section, relevant updated information is sent to the terminals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to set up a temporary path and when the reference result shows it's completion, transmit the information about the path setup to other terminals, thereby obviating the need to have a separate entity to perform the requisite task of checking and notifying completion of temporary paths.

Regarding claim 2, Iwamura discloses:

allowing an additional relay station which is newly added to the network, to transmit the basic-information notification signal to the network by means of a broadcast (see e.g., col. 28, lines 6-9, showing the addition of a new terminal ("relay station")

following the same procedure as other terminals ("transmit the basic-information notification signal to the network by means of a broadcast");

allowing, in response to receiving the basic-information notification signal from the additional relay station, the existing relay station to return the basic-information notification signal containing the basic information of its own station to the additional relay station (see e.g., FIG. 10, block D5)

allowing, in response to receiving the basic-information notification signal returned from the existing relay station, the additional relay station to detect a receiving state and calculate a transmission quality on a transmission line interconnected with the existing relay station which has returned the basic-information notification signal, in accordance with the receiving state (see e.g., col. 6, lines 17-18, and 26-27);

allowing the additional relay station to create or update a receiving-environment table correlating the basic information contained in the basic-information notification signal returned from the existing relay station to the transmission quality on the transmission line interconnecting with the existing relay station which has returned the basic-information notification signal, and store the created or updated receiving-environment table therein (see e.g., FIG. 24, blocks D3, D4, and D5);

allowing the additional relay station to refer to the transmission quality in the receiving-environment table, and transmit a receiving-environment-table communication signal containing the receiving-environment table of its own station to the parent station through the transmission line having the best transmission quality determined by the reference result (see e.g., FIG. 24, block D6);

allowing, in response to receiving the receiving-environment-table communication signal from the additional relay station, the parent station to update the transmission-quality table in accordance with the identifier and the path-setting status contained in the receiving-environment-table communication signal, and store the updated transmission-quality table therein (see e.g., col. 6, lines 22-25; and

allowing the parent station to set the paths to respective ones of the plurality of relay stations including the additional relay station, in accordance with the transmission qualities in the transmission-quality table, and transmit the set paths to respective ones of the plurality of relay stations including the additional relay station (see e.g., col. 6, lines 26-27).

Regarding claim 3, Iwamura discloses:

allowing a child station which is newly added to the network, to transmit the basic-information notification signal to the network by means of a broadcast (see e.g., col. 9, lines 25-28, for a child station transmitting information to the network);

allowing, in response to receiving the basic-information notification signal from the child station, the relay station to return the basic-information notification signal containing the basic information of its own station to the child station (see e.g., col. 9, lines 25-28, as above, for other device ("relay station") transmitting its information to the child device).

allowing, in response to receiving the basic-information notification signal returned from the relay station, the child station to detect a receiving state and calculate a transmission quality on a transmission line interconnecting with the relay station which

has returned the basic-information notification signal, in accordance with the receiving state (see e.g., claim 23, lines 30-33, and 36-40) ;

allowing the child station to create or update a receiving-environment table correlating the basic information contained in the basic-information notification signal returned from the relay station to the transmission quality on the transmission line interconnecting with the relay station which has returned the basic-information notification signal, and store the created or updated receiving-environment table therein (see e.g., FIG. 10, block A5, and col. 7, lines 34-38);

allowing the child station to refer to the transmission quality in the receiving-environment table, and transmit a receiving-environment-table communication signal containing the receiving-environment table of its own station to the parent station through the transmission line having the best transmission quality determined by the reference result (see e.g., col. 7, lines 38-40); and

allowing, in response to receiving the receiving-environment-table communication signal from the child station, the parent station to set a path to the child station in accordance with the path used for transmitting the receiving-environment-table communication signal, and transmit the set path to the child station (see e.g., col. 8, lines 49-51).

Regarding claim 4, Iwamura discloses:

allowing each of the parent station and the plurality of relay stations when receiving a communication signal from another station, to detect a receiving state and

calculate a transmission quality on a transmission line interconnecting with the another station, in accordance with the receiving state (see e.g., Fig. 10, blocks A1 and A5);

allowing the parent station to collect the transmission qualities from the plurality of relay stations (see e.g., col. 9, lines 25-27, for the parent station receiving information ("transmission quality") form other devices);

allowing the parent station to re-set the paths to respective ones of the plurality of relay stations, in accordance with the collected transmission qualities (see e.g., col. 6, lines 44-46 for reselecting ("resetting") the paths by the communication device);

allowing the parent station to comparing the paths to respective ones of the plurality of relay stations before the re-setting with the re-set paths to respective ones of the plurality of relay stations (see e.g., col. 6, lines 39-42); and

allowing the parent station to present the comparison result (see e.g., col. 6, lines 44-46).

Regarding claim 5, Iwamura discloses:

wherein the transmission line is either a wireless line or a distribution line for supplying electric power (see e.g., col. 17, lines 62-63, and 66-68, showing the transmission communication medium could be either wireless or any other means ("electrical distribution line").

Regarding claim 7, Iwamura discloses a network (see e.g., col. 1, lines 7-9, showing a communications network) including a plurality of relay stations and a parent station which are connected with each other through a transmission line (see e.g., col.13, lines 50-58, showing a number of communication devices connected to each

other thru transmission links; and col. 14, lines 41-50 for a representative device ("parent station") transmitting information about itself to other devices ("relay stations")), the network being configured to generate paths from the parent station to respective ones of the relay stations (see e.g., col. 6, lines 30-33, for the selection of communication paths from a communications device to other devices wherein each of the relay stations comprises:

a first communication section operable to transmit and receive a communication signal to/from the network, and detect a receiving state of the communication signal (see e.g., FIG. 8, elements 101 (Receiving Section) and 110 (Transmission Section) of the communication section; and FIG. 10, element A1 ("Receive Packet") for receiving state (interpreted as a state of the device in which a message/signal/packet may be received));

a first processing section operable to transmit a basic-information notification signal to the network using the first communication section at a first time interval by means of a repetitive broadcast, the basic-information notification signal containing basic information which includes an identifier identifying its own station and the status of the path setting to its own station (see e.g., FIG. 8, element 102 (Communication Environment Information Processing Section), and FIG.11, elements B3 and B4);

a second processing section operable to calculate a transmission quality on a transmission line interconnecting with the station which has transmitted the basic-information notification signal, in accordance with the receiving state (see e.g., FIG. 42,

element 31 for processing of information (interpreted as "transmission quality") received about the communication paths);

a third processing section operable to create or update a receiving-environment table correlating the basic information contained in the basic-information notification signal to the transmission quality on the transmission line interconnecting with the station which has transmitted the basic-information notification signal, and store the created or updated receiving-environment table in a receiving-environment-table storage section thereof (see e.g., FIG. 8, element 103 (Communication Environment Information Storage), and col. 18, lines 39-43);

a fourth processing section operable to repeatedly refer to the path-setting status in the receiving-environment table at a second time interval greater than the first time interval, and, when the reference result shows that path setup information representing the completion of setting a path exists in the path-setting status, transmit a receiving-environment-table communication signal containing the receiving-environment table of its own station through the transmission line used for transmitting the basic-information notification signal containing the path setup information (see e.g., FIG. 8, element 105 (Communication Environment Information Acquisition Section), col. 18, lines 44-45, for a timer sending signals to 105; and element 110 (Transmission Section), for transmitting the communication signal);

a fifth processing section operable, in response to receiving the receiving-environment-table communication signal, to forward the received receiving-

environment-table communication signal to the parent station through use of the path (see e.g., FIG. 8, elements 105 and 110);

the parent station comprises:

a second communication section operable to transmit and receive a communication signal to/from the network, and detect a receiving state of the communication signal (see e.g., FIG. 17, elements 101 (Receiving Section) and 110 (Transmission Section) of the Communication Control Unit);

a sixth processing section operable to transmit a basic-information notification signal to the network using the second communication section at the first time interval by means of a repetitive broadcast, the basic-information notification signal containing basic information which includes an identifier identifying its own station and the status of the path setting to its own station (see e.g., FIG. 17, element 102 (Communication Environment Information Processing Section), and FIG.11, elements B3 and B4);

a seventh processing section operable to calculate a transmission quality on a transmission line interconnecting with the station which has transmitted the basic-information notification signal, in accordance with the receiving state (see e.g., FIG. 42, element 31 for processing of information (interpreted as “transmission quality”) received about the communication paths);

an eighth processing section operable to create or update a receiving-environment table correlating the basic information contained in the basic-information notification signal to the transmission quality on the transmission line interconnecting with the station which has transmitted the basic-information notification signal, and store

the created or updated receiving-environment table in a receiving-environment-table storage section thereof (see e.g., FIG. 17, element 103 (Communication Environment Information Storage), and col. 18, lines 39-43);

a ninth processing section operable, in response to receiving the receiving-environment-table communication signal, to create or update a transmission-quality table correlating the inter-station transmission line to the transmission quality thereof, in accordance with the identifier and the transmission quality contained in the receiving-environment-table communication signal, and store the created or updated transmission-quality table in a transmission-quality-table storage section thereof (see e.g., FIG. 46, elements 212 (Communication Path ID Analysis Section), and 40 (Communication Path Storage);

a tenth processing section operable, in response to receiving the receiving-environment-table communication signal, to set a path to the relay station which has transmitted the receiving-environment-table communication signal, and return a path notification communication signal containing the path to the relay station using the second communication section (see e.g., FIG. 17, elements 105 and 110);

an eleventh processing section operable, in response to a lapse of a third time period greater than the second time interval, to set the paths to respective ones of the plurality of relay stations, in accordance with the transmission qualities in the transmission-quality table, and transmit the set paths to respective ones of the plurality of relay stations using the second communication section (see e.g., FIG. 46, for Communication section relating to path selection).

Iwamura does not explicitly disclose setting of a temporary path. However, Iwamura does disclose upon notification of a new update in the communication environment information storage section or updating from the communication environment processing section, relevant updated information is sent to the terminals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to set up a temporary path and when the reference result shows it's completion, transmit the information about the path setup to other terminals, thereby obviating the need to have a separate entity to perform the requisite task of checking and notifying completion of temporary paths.

Regarding claim 8, Iwamura discloses a relay station applicable to a network including a plurality of relay stations and a parent station which are connected with each other through a transmission line (see e.g., col.13, lines 50-58, showing a number of communication devices in a network connected to each other thru transmission links; and col. 14, lines 41-50 for a representative device ("parent station") transmitting information about itself to other devices), the network being configured to generate paths from the parent station to respective ones of the relay stations (see e.g., col. 6, lines 29-32, for a communication device ("parent station") selecting one of a plurality of communication paths to the respective devices ("relay stations")), the relay station comprising: a first communication section operable to transmit and receive a communication signal to/from the network, and detect a receiving state of the communication signal (see e.g., FIG. 8, elements 101 (Receiving Section)and 110 (Transmission Section) in the Communication Unit of the communication device; and

FIG. 10, element A1 (”Receive Packet”) for receiving state (interpreted as a state of the device in which a message/signal/packet may be received));

a first processing section operable to transmit a basic-information notification signal to the network using the first communication section at a first time interval by means of a repetitive broadcast, the basic-information notification signal containing basic information which includes an identifier identifying its own station and the status of the path setting to its own station (see e.g., FIG. 8, element 102 (Communication Environment Information Processing Section), and FIG.11, elements B3 and B4);

a second processing section operable to calculate a transmission quality on a transmission line interconnecting with the station which has transmitted the basic-information notification signal, in accordance with the receiving state (see e.g., FIG. 42, element 31 for processing of information (interpreted as “transmission quality”) received about the communication paths);

a third processing section operable to create or update a receiving-environment table correlating the basic information contained in the basic-information notification signal to the transmission quality on the transmission line interconnecting with the station which has transmitted the basic-information notification signal, and store the created or updated receiving-environment table in a receiving-environment-table storage section thereof (see e.g., FIG. 8, element 103 (Communication Environment Information Storage), and col. 18, lines 39-43);

a fourth processing section operable to repeatedly refer to the path-setting status in the receiving-environment table at a second time interval greater than the first time

interval, and, when the reference result shows that temporary-path setup information representing the completion of setting a temporary path exists in the path-setting status, transmit a receiving-environment-table communication signal containing the receiving-environment table of its own station through the transmission line used for transmitting the basic-information notification signal containing the temporary-path setup information (see e.g., FIG. 8, element 105 (Communication Environment Information Acquisition Section), col. 18, lines 44-45, for a timer sending signals to 105; and element 110 (Transmission Section), for transmitting the communication signal); and

a fifth processing section operable, in response to receiving the receiving-environment-table communication signal, to forward the received receiving-environment-table communication signal to the parent station by use of the path (see e.g., FIG. 8, elements 105 and 110).

Iwamura does not explicitly disclose setting of a temporary path. However, Iwamura does disclose upon notification of a new update in the communication environment information storage section or updating from the communication environment processing section, relevant updated information is sent to the terminals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to set up a temporary path and when the reference result shows it's completion, transmit the information about the path setup to other terminals, thereby obviating the need to have a separate entity to perform the requisite task of checking and notifying completion of temporary paths.

Regarding claim 9, Iwamura discloses a parent station applicable to a network including a plurality of relay stations and a parent station which are connected with each other through a transmission line (see e.g., col.13, lines 50-58, showing a number of communication devices in a network connected to each other thru transmission links; and col. 14, lines 41-50 for a representative device ("parent station") transmitting information about itself to other devices ("relay stations")), the network being configured to generate paths from the parent station to respective ones of the relay stations (see e.g., col. 6, lines 30-33, for the selection of communication paths from a communications device ("parent station") to other devices ("relay stations")), the parent station comprising:

a second communication section operable to transmit and receive a communication signal to/from the network, and detect a receiving state of the communication signal (see e.g., FIG. 17, elements 101 (Receiving Section) and 110 (Transmission Section) of the Communication Control Unit; and FIG. 10, element A1 ("Receive Packet") for receiving state (interpreted as a state of the device in which a message/signal/packet may be received));

a sixth processing section operable to transmit a basic-information notification signal to the network using the second communication section at the first time interval by means of a repetitive broadcast, the basic-information notification signal containing basic information which includes an identifier identifying its own station and the status of the path setting to its own station(see e.g., FIG. 17, element 102 (Communication Environment Information Processing Section), and FIG.11, elements B3 and B4);

a seventh processing section operable to calculate a transmission quality on a transmission line interconnecting with the station which has transmitted the basic-information notification signal, in accordance with the receiving state (see e.g., FIG. 42, element 31 for processing of information (interpreted as "transmission quality") received about the communication paths);

an eighth processing section operable to create or update a receiving-environment table correlating the basic information contained in the basic-information notification signal to the transmission quality on the transmission line interconnecting with the station which has transmitted the basic-information notification signal, and store the created or updated receiving-environment table in a receiving-environment-table storage section thereof (see e.g., FIG. 17, element 103 (Communication Environment Information Storage), and col. 18, lines 39-43);

a ninth processing section operable, in response to receiving a receiving-environment-table communication signal containing the receiving-environment table of the relay station, to create or update a transmission-quality table correlating the inter-station transmission line to the transmission quality thereof, in accordance with the identifier and the transmission quality contained in the receiving-environment-table communication signal, and store the created or updated transmission-quality table in a transmission-quality-table storage section thereof (see e.g., FIG. 46, elements 212 (Communication Path ID Analysis Section), and 40 (Communication Path Storage);

a tenth processing section operable, in response to receiving the receiving-environment-table communication signal, to set a path to the relay station which has

transmitted the receiving-environment-table communication signal, and return a path notification communication signal containing the path to the relay station using the second communication section (see e.g., FIG. 17, elements 105 and 110); and

an eleventh processing section operable, in response to a lapse of a third time period greater than the second time interval, to set the paths to respective ones of the plurality of relay stations, in accordance with the transmission qualities in the transmission-quality table, and transmit the set paths to respective ones of the plurality of relay stations using the second communication section (see e.g., FIG. 46, for Communication section relating to path selection).

Iwamura does not explicitly disclose setting of a temporary path. However, Iwamura does disclose upon notification of a new update in the communication environment information storage section or updating from the communication environment processing section, relevant updated information is sent to the terminals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to set up a temporary path and when the reference result shows it's completion, transmit the information about the path setup to other terminals, thereby obviating the need to have a separate entity to perform the requisite task of checking and notifying completion of temporary paths.

9. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura as applied to claim 1above, in view of Bevan et al. (Pub. #US 2004/0156353), hereinafter referred to as Bevan.

Regarding claim 6, Iwamura discloses the claimed invention above, but does not disclose wherein the transmission quality on the transmission line is a PLR value calculated from the receiving state of the transmission line, a packet length of the communication signal, and a communication rate of the transmission line.

However, Bevan teaches in a communications network (see e.g., ABSTRACT, lines 1-3) the transmission quality on the transmission line is dependent on the Packet Loss Rate ("PLR Value") (see e.g., ¶ [0092],and [0097], and the packet failure could be a function of the characteristics related to the communication channel (see e.g., ¶ [0055], lines 3-5).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the applicant's invention was made to combine the determination of transmission quality based on packet loss with the path setting of the stations in a communications network, in order to provide a comprehensive mechanism for generating paths based on well-defined quality metrics.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Longinov et al. (U.S. Patent #7,106,177) reference is also cited to show related art.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASIF H. KHAN whose telephone number is 571-270-

1955. The examiner can normally be reached Monday to Friday: 8:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on 571-272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Asif H. Khan

/Asif H. Khan/
Examiner, Art Unit 4183
February 12, 2008

/Len Tran/

Supervisory Patent Examiner, Art Unit 4183